AMENDMENTS TO THE CLAIMS

1. **(Original)** A plasmid comprising an rRNA gene having a mutant Anti-Shine-Dalgarno sequence, at least one mutation in said rRNA gene, and a genetically engineered gene which encodes a selectable marker having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair.

2. **(Original)** The plasmid of claim 1, wherein the rRNA gene is from a species selected from the group consisting of *Mycobacterium tuberculosis, Pseudomonas aeruginosa, Salmonella typhi, Yersenia pestis, Staphylococcus aureus, Streptococcus pyogenes, Enterococcus faecalis, Chlamydia trachomatis, Saccharomyces cerevesiae, Candida albicans,* and *trypanosome.*

3. **(Original)** The plasmid of claim 1, wherein the selectable marker is chosen from the group consisting of chloramphenicol acetyltransferase (CAT), green fluorescent protein (GFP), and both CAT and GFP.

4. **(Currently Amended)** The plasmid of claim 1, wherein the mutant Anti-Shine-Dalgarno sequence is selected from the group consisting of the sequences set forth in SEQ ID NOS: 24-159. ~~Figures 12, 13, 15, and 16.~~

5. **(Currently Amended)** The plasmid of claim 1, wherein the mutant Shine-Dalgarno sequence is selected from the group consisting of the sequences set forth in SEQ ID NOS: 24-159. ~~Figures 12, 13, 15, and 16.~~

6. **(Currently Amended)** The plasmid of claim 1, wherein the mutant Anti-Shine-Dalgarno sequence and the mutant SD sequence are a mutually compatible pair selected from the group consisting of the sequences set forth in SEQ ID NOS: 24-159. ~~Figures 12, 13, 15, and 16.~~

7. **(Original)** The plasmid of claim 6, wherein the mutually compatible mutant Shine-Dalgarno and mutant Anti-Shine-Dalgarno pair permits translation by the rRNA of the selectable marker.

8. **(Original)** The plasmid of claim 3, wherein the selectable marker is CAT.

9. **(Original)** The plasmid of claim 3, wherein the selectable marker is GFP.

10. **(Original)** A cell comprising the plasmid of claim 1.

11. **(Original)** The cell of claim 10, wherein the mutations in the rRNA gene affect the quantity of selectable marker produced.

12. **(Original)** The cell of claim 10, wherein the cell is a bacterial cell.

13. **(Original)** The plasmid of claim 1, wherein the DNA sequence encoding the rRNA gene is under the control of an inducible promoter.

14. **(Original)** A plasmid comprising an *E. coli* 16S rRNA gene having a mutant Anti-Shine-Dalgarno sequence, at least one mutation in said 16S rRNA gene, and a genetically engineered gene which encodes GFP having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair.

15. **(Currently Amended)** The plasmid of claim 14, wherein the mutant Anti-Shine-Dalgarno sequence is selected from the group consisting of the sequences set forth in SEQ ID NOS: 24-159. ~~Figures 12, 13, 15, and 16.~~

16. **(Currently Amended)** The plasmid of claim 14, wherein the mutant Shine-Dalgarno sequence is selected from the group consisting of the sequences set forth in SEQ ID NOS: 24-159. ~~Figures 12, 13, 15, and 16.~~

17. **(Currently Amended)** The plasmid of claim 14, wherein the mutant Anti-Shine-Dalgarno sequence and the mutant Shine-Dalgarno sequence are a mutually compatible pair selected from the group consisting of the sequences set forth in SEQ ID NOS: 24-159. ~~Figures 12, 13, 15, and 16.~~

18. **(Original)** The plasmid of claim 17, wherein the mutually compatible mutant Shine-Dalgarno and mutant Anti-Shine-Dalgarno pair permits translation by the mutant 16S rRNA of the selectable marker GFP.

19. **(Original)** A cell comprising the plasmid of claim 14.

20. **(Original)** The cell of claim 19, wherein the mutation in the 16S rRNA gene affects the quantity of selectable marker produced.

21. **(Original)** The cell of claim 19, wherein the cell is a bacterial cell.

22. **(Original)** The plasmid of claim 14, wherein the DNA sequence encoding the 16S rRNA gene is under the control of an inducible promoter.

23. **(Original)** A method for identifying functional mutant ribosomes comprising:

(a) transforming a host cell with a plasmid comprising an rRNA gene having a mutant Anti-Shine-Dalgarno sequence, at least one mutation in said rRNA gene, and a genetically engineered gene which encodes a selectable marker having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;

(b) isolating cells via the selectable marker; and

(c) identifying the rRNA from the cells from step (b), thereby identifying functional mutant ribosomes.

24. **(Original)** A method for identifying functional mutant ribosomes comprising:

(a) transforming a host cell with a plasmid comprising an *E. coli* 16S rRNA gene having a mutant Anti-Shine-Dalgarno sequence, at least one mutation in said 16S rRNA gene, and a genetically engineered gene which encodes GFP having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;

(b) isolating cells via the GFP; and

(c) identifying the rRNA from the cells from step (b), thereby identifying functional mutant ribosomes.

25. **(Original)** A method for identifying functional mutant ribosomes that may be suitable as drug targets comprising:

(a) transforming a host cell with a plasmid comprising an rRNA gene having a mutant Anti-Shine-Dalgarno sequence, at least one mutation in said rRNA gene, and a genetically engineered gene which encodes a selectable marker having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;

(b) isolating cells via the selectable marker;
(c) identifying and sequencing the rRNA from the cells from step (b), thereby identifying regions of interest;
(d) selecting regions of interest from step (c);
(e) mutating the regions of interest of step (d);
(f) inserting the mutated regions of interest from step (e) into a plasmid comprising an rRNA gene having a mutant Anti-Shine-Dalgarno sequence and a genetically engineered gene which encodes a selectable marker having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;
(g) transforming a host cell with the plasmid from step (f);
(h) isolating cells of step (g) via the selectable marker; and
(i) identifying the rRNA from step (h), thereby identifying functional mutant ribosomes that may be suitable as drug targets.

26. **(Original)** A method for identifying functional mutant ribosomes that may be suitable as drug targets comprising:

(a) transforming a host cell with a plasmid comprising an *E. coli* 16S rRNA gene having a mutant Anti-Shine-Dalgarno sequence, at least one mutation in said 16S rRNA gene, and a genetically engineered gene which encodes GFP having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;
(b) isolating cells via the GFP;
(c) identifying and sequencing the rRNA from the cells from step (b), thereby identifying regions of interest;
(d) selecting the regions of interest from step (c);
(e) mutating the regions of interest from step (d);
(f) inserting the mutated regions of interest from step (e) into a plasmid comprising an *E. coli* 16S rRNA gene having a mutant Anti-Shine-Dalgarno sequence and a genetically engineered gene which encodes GFP having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;
(g) transforming a host cell with the plasmid from step (f);
(h) isolating cells of step (g) via the GFP; and
(i) identifying the rRNA from step (h), thereby identifying functional mutant ribosomes that may be suitable as drug targets.

27. **(Original)** A method for identifying drug candidates comprising:
(a) transforming a host cell with the plasmid of claim 1;
(b) isolating cells via the selectable marker;
(c) identifying and sequencing the rRNA from step (b) to identify the regions of interest;
(d) selecting regions of interest from step (c);
(e) mutating the regions of interest from step (d);
(f) inserting the mutated regions of interest from step (e) into a plasmid comprising an rRNA gene having a mutant Anti-Shine-Dalgarno sequence and a genetically engineered gene which encodes a selectable marker having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;
(g) transforming a host cell with the plasmid from step (f);
(h) isolating cells from step (g) via the selectable marker;
(i) identifying the rRNA from step (h) to identify the functional mutant ribosomes;
(j) screening drug candidates against functional mutant ribosomes from step (i);
(k) identifying the drug candidates from step (j) that bound to the functional mutant ribosomes from step (i);
(l) screening the drug candidates from step (k) against a human rRNA; and
(m) identifying the drug candidates from step (l) that do not bind to the human rRNA, thereby identifying drug candidates.

28. **(Original)** A method for identifying drug candidates comprising:
(a) transforming a host cell with the plasmid of claim 14;
(b) isolating cells via the selectable marker;
(c) identifying and sequencing the rRNA from step (b) to identify the regions of interest;
(d) selecting the regions of interest from step (c);
(e) mutating the regions of interest from step (d);
(f) inserting the mutated regions of interest from step (e) into a plasmid comprising an *E. coli* 16S rRNA gene having a mutant Anti-Shine-Dalgarno sequence and a genetically engineered gene which encodes GFP having a mutant Shine-Dalgarno sequence, wherein the mutant Anti-Shine-Dalgarno and the mutant Shine-Dalgarno sequence are a mutually compatible pair;
(g) transforming a host cell with the plasmid from step (f);

(h) isolating cells from step (g) via the selectable marker;
(i) identifying the rRNA from step (h) to identify the functional mutant ribosomes;
(j) screening drug candidates against the functional mutant ribosomes from step (i);
(k) identifying the drug candidates from step (j) that bound to the functional mutant ribosomes from step (i);
(l) screening the drug candidates from step (k) against a human 16S rRNA; and
(m) identifying the drug candidates from step (l) that do not bind to the human 16S rRNA, thereby identifying drug candidates.

29. **(New)** The functional mutant ribosomes identified by the method of claim 23.

30. **(New)** The functional mutant ribosomes identified by the method of claim 24.

31. **(New)** The functional mutant ribosomes that may be suitable as drug targets identified by the method of claim 25.

32. **(New)** The functional mutant ribosomes that may be suitable as drug targets identified by the method of claim 26.

33. **(New)** The drug candidates identified by the method of claim 27.

34. **(New)** The drug candidates identified by the method of claim 28.

35. **(New)** A functional genomics database comprising the functional mutants identified by claim 29.

36. **(New)** A functional genomics database comprising the functional mutants identified by claim 30.